

WHAT IS CLAIMED IS:

1. A method of forming a well in a semiconductor device, comprising the steps of:

forming a trench in a semiconductor substrate using a patterned pad
5 nitride film as an etch mask so that a field region is opened;

forming an oxide film along the surface of the trench;

performing an additional ion implantation process to form an additional ion implantation layer on the sidewalls of the trench;

filling the trench with an insulating material to form a field oxide film;
10 and

removing the pad nitride film and then forming a well within the semiconductor substrate by means of a well ion implantation process and a subsequent annealing process.

15 2. The method as claimed in claim 1, wherein the additional ion implantation process includes implanting an ion in a tilt of 3° to 10° and rotating the device 4 times.

3. The method as claimed in claim 1, wherein the additional ion
20 implantation process and the well ion implantation process use the same impurity ion.